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S/N: 10/604,299

**REMARKS**

In the current Office Action, mailed November 10, 2004, claims 1-23 of the present application were examined. Applicant appreciates rejoinder of all pending claims. The Examiner rejected claims 1-7, 9-14, 16-20, and 22 under 35 U.S.C. §102(b) as being anticipated by Lian et al. (USP 5,804,969 A). The Examiner next rejected claims 8, 15, 21, and 23 under 35 U.S.C. §103(a) as being unpatentable over Lian et al. in view of Roemer et al. (USP 4,825,162). However, in the last response Applicant added a new claim, claim 24. The Examiner did not examine newly presented claim 24. Applicant requests examination of claim 24.

The Examiner rejected claim 1 under 35 U.S.C. §102(b) as being anticipated by Lian et al. However, Lian et al. does not teach or suggest that called for in claim 1.

Lian et al. teaches an MRI RF coil assembly 10 that has left and right RF coils 12a and 12b and circuitry 14 connected therebetween. Col. 3, Ins. 31-33. Each RF coil 12a, 12b includes a top ring 16a, 16b, respectively, and a bottom ring 18a, 18b, respectively. Col. 3, Ins. 34-36. Lian et al. teaches that "[o]nly top rings 16a, 16b . . . are directly electrically connected to circuitry 14." Col. 4, Ins. 33-34. Lian et al. further teaches that "[b]ottom rings 18a, 18b are inductively coupled to their associated top rings 16a, 16b by mutual inductance . . ." but are otherwise "electrically isolated from top rings 16a, 16b and circuitry 14." Col. 4, Ins. 34-38. Lian et al. fails to teach or disclose that called for in claim 1 with regard to RF coils 12a and 12b forming a pair of RF coils or with regard to rings 16a, 18a or rings 16b, 18b forming a pair of RF coils.

The Examiner stated that Lian et al discloses "a pair of RF coils movable with respect to one another (#16a, #16b, #18a, and #18b wherein the coil pair #18 is movable with respect to the other pair in order to conform to the area to be examined and to suit patient's anatomy). . . ." Office Action, para. 2. Lian et al. does not disclose that called for in claim 1 with respect to rings 16a, 18a forming a pair of RF coils movable with respect to one another.

Applicant does not disagree that Lian et al. discloses that ring 18a is movable with respect to rings 16a and 16b, respectively. In fact, Lian et al. teaches that "it is possible to position a patient's breasts in coil assembly 10, generate an MR image, and then detach one or both bottom rings 18a, 18b to expose the breast(s)." Col. 5, Ins. 54-57. However, Lian et al. fails to teach or disclose a pair of RF coils movable with respect to each other wherein a first inductor assembly is in series with one RF coil and a second inductor assembly is in series with the another RF coil as called for in claim 1. Lian et al. may teach a pair of coils, but not as claimed.

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Lian et al. teaches an adjustable decoupling capacitor,  $C_6$ , that "can be used to decouple the coils." Col. 5, Ins. 11-14. Lian et al. shows capacitor,  $C_6$ , connected to RF coil 16a. See Fig. 1. Lian et al. also teaches that "coils 12a, 12b can also be decoupled by coupling a variable decoupling inductor  $L_6$  between them." Col. 6, Ins. 35-37, and Fig. 9. Thus, while Lian et al. discloses an inductor ( $L_6$ ) connected to a first RF coil 1, there is no teaching or disclosure of a second inductor in series with a second RF coil. Therefore, Lian et al. fails to teach or suggest that which is presently claimed. At a minimum, a second inductor assembly in series with the another RF coil as called for in claim 1, is absent in Lian et al.

Furthermore, claim 1 calls for, in part, that the inductor assemblies are configured to have a mutual inductance opposite in polarity and substantially equal in magnitude to a mutual inductance of the pair of RF coils. Lian et al. does not teach that the inductor assemblies are configured to have a mutual inductance opposite in polarity and substantially equal in magnitude to a mutual inductance of the pair of RF coils.

Lian et al. also fails to teach or disclose that called for in claim 1 with regard to RF coils 12a and 12b forming a pair of RF coils. Lian et al. teaches that top rings 16a, 16b of RF coils 12a, 12b "are relatively permanently attached, e.g., by screws 36, to sled 30." Col. 6, Ins. 5-7. Since top rings 16a, 16b of RF coils 12a, 12b are relatively permanently attached, Lian et al. does not teach a pair of RF coils movable with respect to one another with regard to RF coils 12a and 12b.

Further, Lian et al. fails to teach a second inductor assembly in series with the other RF coil. As stated above, Lian et al. teaches that "coils 12a, 12b can also be decoupled by coupling a variable decoupling inductor  $L_6$  between them." Col. 6, Ins. 35-37, and Fig. 9. Lian et al. fails to disclose another inductor assembly in series with one of the pair of RF coils 12a, 12b. Lian et al. teaches variable decoupling inductor  $L_6$  in series with RF coil 12a and RF coil 12b; however, there is no disclosure for a second inductor assembly. Id. RF coils 12a and 12b are disclosed as being connected to the same inductor assembly, not each in series with a first and second inductor assembly, respectively, as called for in claim 1.

For at least the reasons above, claim 1 and the claims that depend therefrom are believed patentable over the prior art of record.

With regard to the rejection of claim 10 under 35 U.S.C. §102(b) as being anticipated by Lian et al., the Examiner referred to the rejections of claims 1 and 9. Office Action, para. 10. Accordingly, as applicable, Applicant incorporates the remarks set forth above.

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Claim 10 calls for, in part, a first moveable coil loop and a second moveable coil loop. As stated above, the Examiner identified the coil pair #18 as movable with respect to coils 16a, 16b. Also as stated above, Lian et al. teaches that top rings 16a, 16b of RF coils 12a, 12b "are relatively permanently attached, e.g., by screws 36, to sled 30." Col. 6, Ins. 5-7. Therefore, neither RF coils 12a, 12b nor top rings 16a, 16b are moveable coil loops. With regard to bottom rings 18a and 18b, Lian et al. fails to teach that called for in claim 10 with regard to bottom ring 18a forming a first moveable coil loop and bottom ring 18b forming a second coil loop.

Specifically, claim 10 calls for, in part, a mutual inductance compensation circuit connected to the first and the second moveable coil loops wherein the compensation circuit is constructed to generate an inductance that minimizes a coupling of the first and the second coil loops independent of coil loop position relative to one another. As stated above, Lian et al. teaches that bottom rings 18a, 18b are electrically isolated from top rings 16a, 16b and circuitry 14. Col. 4, Ins. 34-38. There is no teaching of a mutual inductance compensation circuit connected to the bottom rings 18a and 18b wherein the compensation circuit is constructed to generate an inductance that minimizes a coupling of the first and the second coil loops independent of coil loop position relative to one another.

For at least the reasons above, claim 10 and the claims that depend therefrom are believed patentable over the prior art of record.

With regard to the rejection of claim 18 under 35 U.S.C. §102(b) as being anticipated by Lian et al., the Examiner referred to the rejections of claims 1 and 9. Office Action, para. 10. Accordingly, Applicant incorporates the remarks set forth above as applicable.

Claim 18 calls for, in part, connecting a first inductor assembly in series with a first RF coil and connecting a second inductor assembly in series with a second RF coil. As stated above, Lian et al. teaches that "coils 12a, 12b can also be decoupled by coupling a variable decoupling inductor L<sub>6</sub> between them." Col. 6, Ins. 35-37, and Fig. 9. However, Lian et al. fails to disclose a second inductor assembly. The variable decoupling inductor L<sub>6</sub> between coils 12a and 12b is a single variable decoupling inductor, not a first inductor assembly connected to one coil and a second inductor assembly connected to the other coil. Both coils 12a, 12b are connected to the same inductor assembly. Lian et al. does not disclose connecting a first inductor assembly in series with a first RF coil and connecting a second inductor assembly in series with a second RF coil.

For at least the reasons above, claim 18 and the claims that depend therefrom are believed patentable over the prior art of record.

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The Examiner rejected claims 8, 15, 21, and 23 under 35 U.S.C. §103(a) as being unpatentable over Lian et al. in view of Roemer et al. Applicant respectfully disagrees with the Examiner with respect to the art as applied, but in light of claims 8, 15, 21, and 23 depending from what are believed otherwise allowable claims, Applicant does not believe additional remarks are necessary and therefore requests allowance of claims 8, 15, 21, and 23 at least pursuant to the chain of dependency.

Therefore, in light of at least the foregoing, Applicant respectfully believes that the present application is in condition for allowance. As a result, Applicant respectfully requests timely issuance of a Notice of Allowance for claims 1-24.

Applicant appreciates the Examiner's consideration of these Amendments and Remarks and cordially invites the Examiner to call the undersigned, should the Examiner consider any matters unresolved.

Respectfully submitted,



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